Instructional Materials Evaluation Criteria – Third Grade Mathematics

Title _____ **ISBN#** _____

Established Track Record? YES ☐ NO ☐
If yes, please list research source(s):

Meets National Mathematics Standards? YES ☐ NO ☐

Standard I: Students will understand the base-ten numeration system, place value concepts, and perform operations with whole numbers and simple fractions.

Objectives	Indicators	Covered? Yes	Covered? No	Explanation of Coverage	Percentage of Coverage
Objective 1: Represent whole numbers up to 10,000, comprehend place value concepts, and identify relationships among whole numbers using base-ten models and symbolic notation.	a. Read, write, and represent whole numbers using standard and expanded form.				
	b. Demonstrate multiple ways to represent numbers using models and symbolic representations (e.g., fifty is the same as two groups of 25, the number of pennies in five dimes, or 75-25).				
	c. Identify the place and the value of a given digit in a four-digit numeral and round numbers to the nearest ten, hundred, and thousand.				
	d. Order and compare whole numbers on a number line and use the inequality symbols <, >, ≠, and = when comparing whole numbers.				

	e. Identify factors and multiples of whole numbers.				
Objective 2. Use fractions to communicate and compare parts of the whole.	a. Identify the denominator of a fraction as the number of equal parts of the unit whole and the numerator of a fraction as the number of equal parts being considered.				
	b. Define regions and sets of objects as a whole and divide the whole into equal parts using a variety of objects, models, and illustrations.				
	c. Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, sixths, and eighths.				
	d. Compare and order fractions using models, pictures, the number line, and symbols.				
	e. Find equivalent fractions using concrete and pictorial representations.				
Objective 3. Estimate and model problems involving addition, subtraction, multiplication, and division.	a. Demonstrate the meaning of multiplication and division of whole numbers through the use of a variety of representations (e.g., equal-sized groups, arrays, area models, and equal jumps on a number line for multiplication, partitioning and sharing for				

	division).				
	b. Use a variety of strategies and tools, such as repeated addition or subtraction, the number line, and counters to model multiplication and division problems.				
	c. Demonstrate, using objects, that multiplication and division are inverse operations (e.g., 3x4=12; thus, 12÷4=3 and 12÷3=4).				
	d. Demonstrate the effect of place value when multiplying whole numbers by 10.				
	e. Demonstrate the effect of place value when multiplying whole numbers by 10.				
Objective 4: Compute and solve problems involving addition and subtraction of 3-and 4 digit numbers and basic facts of multiplication and division.	a. Find the sum or difference of numbers, including monetary amounts, using models and strategies such as expanded form, compensation, partial sums, and the standard algorithm.				
	b. Compute basic multiplication facts (0-10) and related division facts using a variety of strategies based on properties of addition and multiplication (i.e., commutative, associative, identity, zero, and the distributive properties).				

Standard II: Students will use patterns, symbols, operations, and properties of addition and multiplication to represent and describe simple number relationships.					
Objectives	**Indicators**	**Covered? Yes**	**Covered? No**	**Explanation of Coverage**	**Percentage of Coverage**
Objective 1: Create, represent, and analyze growing patterns.	a. Create and extend growing patterns using objects, numbers, and tables.				
	b. Create and extend growing patterns using objects, numbers, and tables.				
Objective 2. Recognize, represent, and simplify simple number relationships using symbols, operations, and properties.	a. Represent numerical relationships as expressions, equations, and inequalities.				
	b. Solve equations involving equivalent expressions (e.g., 6 + 4 = Δ + 7).				
	c. Use the >, <, and = symbols to compare two expressions involving addition and subtraction (e.g., 4+6 □ 3+2; 3+5 □ 16-9).				
	d. Use the >, <, and = symbols to compare two expressions involving addition and subtraction (e.g., 4+6 □ 3+2; 3+5 □ 16-9).				

Standard III: Students will describe and analyze attributes of two-dimensional shapes.					
Objectives	**Indicators**	**Covered? Yes**	**Covered ? No**	**Explanation of Coverage**	**Percentage of Coverage**
Objective 1: Describe and compare attributes of two-dimensional shapes.	a. Identify, describe, and classify polygons (e.g., pentagons, hexagons, octagons).				
	b. Identify attributes of triangles (e.g., two equal sides for the isosceles triangle, three equal sides for the equilateral triangle, right angle for the right triangle).				
	c. Identify attributes of quadrilaterals (e.g., parallel sides for the parallelogram, right angles for the rectangle, equal sides and right angles for the square).				
	d. Identify right angles in geometric figures, or in appropriate objects, and determine whether other angles are greater or less than a right angle.				
Objective 2. Apply transformations and determine whether two polygons are congruent.	a. Demonstrate the effect of a slide or flip on a figure using objects.				

	b. Determine whether two polygons are congruent by sliding, flipping, or turning to physically fit one object on top of the other.				

Standard IV: Students will select and use appropriate units and measurement tools to solve problems.					
Objectives	**Indicators**	**Covered? Yes**	**Covered ? No**	**Explanation of Coverage**	**Percentage of Coverage**
Objective 1: Select and use appropriate tools and units to estimate and measure length, weight, capacity, time, and perimeter of two-dimensional figures.	a. Describe the part-whole relationships (e.g., 3 feet in a yard, a foot is 1/3 of a yard) between metric units of length (i.e., centimeter, meter), and among customary units of length (i.e., inch, foot, yard), capacity (i.e., cup, quart), and weight (i.e. pound, ounce).				
	b. Measure the length of objects to the nearest centimeter, meter, half and quarter-inch, foot, and yard.				
	c. Measure capacity using cups and quarts and measure weight using pounds and ounces.				
	d. Identify the number of minutes in an hour, number of hours in a day, the number of days in a year, and the number of weeks in a year.				

	e. Describe perimeter as a measurable attribute of two-dimensional figures and estimate and measure perimeter with metric and customary units.				
Objective 2: Solve problems involving measurements.	a. Determine simple equivalences of measurements (e.g., 30 inches = 2 feet and 6 inches; 6 cups = 1½ quarts; 90 min. = 1 hr. 30 min.).				
	b. Compare length, weight, and capacity of given objects.				
	c. Solve problems involving perimeter.				
	d. Determine elapsed time in hours (e.g., 7:00 a.m. to 2:00 p.m.).				

Standard V: Students will collect and organize data to make predictions and identify basic concepts of probability.

Objectives	Indicators	Covered? Yes	Covered ? No	Explanation of Coverage	Percentage of Coverage
Objective 1: Collect, organize, and display data to make predictions.	a. Collect, read, represent, and interpret data using tables, graphs, and charts, including keys (e.g., pictographs, bar graphs, frequency tables, line plots).				
	b. Make predictions based on a				

	data display.				
Objective 2. Identify basic concepts of probability.	a. Describe the results of events using the terms “certain,” “likely,” “unlikely,” and “impossible.”				
	b. Conduct simple probability experiments, record possible outcomes systematically, and display results in an organized way (e.g., chart, graph).				
	c. Use results of simple probability experiments to predict future outcomes.				

Curriculum Coverage	**3**	**2**	**1**	**0**	**N/A**
Meets Core Standards and Objectives	80% of the state core objectives are covered. Objectives in instructional materials are clearly stated with measurable outcomes.	70% of the state core objectives are covered. Objectives in instructional materials are clearly stated with measurable outcomes.	50% of the state core objectives are covered.	Less than half of the state core objectives are covered.	
Content	Accurate information reflecting current mathematical knowledge. No content bias.	Some inaccuracies found, however information reflects current mathematical knowledge. No content bias.	Many inaccuracies were found on major mathematical concepts or content bias created problems with mathematical concepts.	Major inaccuracies found in mathematical content or concepts.	
Covers Process Skills	Materials support and encourage students to use mathematical process skills (i.e., problem solving, communication, reasoning, and proof, connections, representation).	Materials provide a range of activities with set outcomes. Process skills are mentioned but not incorporated into instructional process.	Materials provide a set of explicit step-by-step instructions. Limited amount of process skills mentioned.	No hands-on activities. No process skills mentioned.	
Age Appropriate	A wide range of activities to accommodate various developmental levels at a reasonable pace and depth of coverage. Includes age appropriate cross-curricular references (e.g., literature, software, etc.) Content organized so prerequisite skills and knowledge are developed before more complex skills.	Some activities are adaptable to the appropriate age level. Some cross-curricular activities are given. Some attention given to prerequisite skills and knowledge.	Limited developmentally appropriate activities. Prerequisite skills and prior knowledge are not sufficiently developed before more complex concepts are introduced.	Age appropriate issues are not addressed. Several activities are not based on appropriate levels.	
Pedagogically Sound	Facilitates a wide range of teacher and student activities that reflect various learning styles and individual needs of students. Includes a wide variety of pedagogical strategies for flexible grouping and instruction.	Encourages and assists teachers in addressing learning styles and individual needs of students. Includes various pedagogical strategies for flexible grouping and instruction.	Addresses differences in learning and teaching to a limited degree. Includes some pedagogical strategies for flexible grouping and instruction.	Hinders effective pedagogy.	

Physical Qualities	**3**	**2**	**1**	**0**	**N/A**
Durability	Materials are securely bound and reinforced.	Materials are hardbound adequately.	Materials have secure binding.	Materials have inferior binding.	
Print Size and legibility for intended grade level	Appropriate use of font size and format for intended grade level.	Font size adequate for intended grade level.	Font size and format too small or too large for age group.	Font size inconsistent.	
	Key words or phrases bold faced and/or italicized.	Some key words or phrases boldfaced and/or italicized.	Highlighting was used too much, emphasized too much information.	No key words or phrases boldfaced or italicized.	
Pictures, tables, and graphics	Appropriate and varied pictures, tables, and graphs. Graphs and tables are correctly labeled (e.g., titles, keys, labels).	Limited pictures, tables, and graphs. Some tables and graphs are not labeled correctly.	Very limited pictures, tables, and graphs.	Inappropriate pictures, tables, and graphs.	
Includes table of content, glossaries, and index	Tables of contents, indices, glossaries, content summaries, and assessment guides are designed to help teachers, parents/guardians, and students. Clearly represents concepts within the text.	Tables of contents, indices, glossaries, content summaries, and assessment guides are designed to help teachers, parents/guardians, and students, are adequate but not clearly defined concepts within the text.	Simple tables of contents, indices, glossaries, content summaries, and assessment guides are included.	Is missing one or more of the following: simple table of contents, glossaries, content summaries, assessment guides, or indices.	
Ancillary Materials	**3**	**2**	**1**	**0**	**N/A**
Teacher Materials	Lesson plans are easy to understand and implement. Are clearly written and presented with accurate concepts.	Most lesson plans are easy to understand and implement. Are clearly written and presented with accurate concepts.	Lesson plans are difficult to understand.	No lesson plans.	
	Mathematical terms and academic vocabulary are appropriately used.	Generally mathematical terms and academic vocabulary are appropriately used.	Some mathematical terms and academic vocabulary are appropriately used.	There is a lack of mathematical terms and academic vocabulary.	
	Incorporates integration suggestions to other curriculum areas.	Most integration supports other curricular areas.	Some integration support for other curricular areas.	No integration support available.	
	Investigations and problem solving activities focus on demonstrating mathematical principles in the content area.	Most investigations and problem solving activities focus on demonstrating mathematical principles in the content area.	Limited investigations and problem solving activities focus on demonstrating mathematical principles in the content area.	Investigations and problem solving activities are not related to content area or no investigation activities.	

Ancillary Materials cont.	**3**	**2**	**1**	**0**	**N/A**
Student Materials	Activities engage students in purposeful mathematics.	Most activities engage students in purposeful mathematics.	Some activities engage students in purposeful mathematics.	Activities do not develop the concept studied.	
	Activities incorporate use of process skills (i.e., problem solving, communication, reasoning and proof, connections, representation) for deep understanding of mathematical principles.	Activities encourage the use of process skills for deep understanding of mathematical principles.	Activities mention the use of process skills for deep understanding of mathematical principals.	Activities do not encourage process skills for deep understanding of mathematics.	
	Includes ideas to extend concepts in real world applications.	Some ideas are included to extend concepts in real world applications.	Limited real world applications.	No real world applications suggested.	
Parent Materials	Homework assignments and activities support classroom learning and are written so that parents/guardians can help their children.	Suggested strategies and activities to assist parents/guardians.	Limited activities available for parent/guardian use.	No parent/guardians activities included.	
	ESL strategies and activities that support classroom learning are provided in materials sent home to parents.	Some ESL strategies and activities are provided in materials sent home to parents.	A few ESL strategies and activities that may be sent home to parents are provided.	No ESL strategies and activities are provided.	
Manipulatives	Manipulatives are provided and are appropriate.	Manipulatives are provided.	Manipulatives are not provided.	Manipulatives are not part of the program.	
	Manipulatives can be replaced economically and locally.	Manipulatives can be replaced locally or by mail order.	Needed manipulatives can be obtained locally or special ordered.		
Technology (teachers)	**3**	**2**	**1**	**0**	**N/A**
Ease of Use	Menus are easy to read and follow.	Menus are generally easy to read and follow.	Menus are easy to read. Might have to read manual to understand operation of technology. (e.g., laser remote, software.)	Menus are not very descriptive. Hard to follow.	
	User-friendly installation requires a minimal level of computer expertise.	Installation requires little computer expertise.	Installation requires some knowledge or expertise.	Installation requires expertise.	
	Manual and directions are understandable.	Manuals and directions are simple.	Manuals are included.	No manuals or written instructional materials are provided.	

Technology (teachers) cont.	**3**	**2**	**1**	**0**	**N/A**
Audio/Visual attributes	High quality audio and visuals are correct and contribute to overall effectiveness of program.	Audio and visuals are of good quality. Complements program effectiveness.	Audio and visuals are acceptable. Aligned with program content.	Audio and visual defects are apparent. Distracts from program content.	
	Information is current and up-to-date.	Information is current.	Information is mostly current.	Information is out-of-date.	
Enhances learning experience	Enhances learning experience. Adds depth and diversity.	Offers some additional depth and diversity to learning experience.	Mild impact to overall learning experience.	Does not impact learning experience.	
Technology (students)	**3**	**2**	**1**	**0**	**N/A**
Calculator	Appropriate activities and materials are provided to explore and prove conjectures.	Activities help students learn use to use calculator to explore concepts	Activities to learn to use calculators	No use of calculators or calculators used to check work only.	
Computer	Software allows students to explore and prove mathematical conjectures	Software allows students to explore math conjectures	Software demonstrates processes for mathematical applications	Drill and practice only	
Universal Access	**3**	**2**	**1**	**0**	**N/A**
Content accurately reflects diverse population	Provides ways to adapt curriculum for all students (e.g., special needs, learning difficulties, English language learners, advanced learners.)	Provides some ways to adapt curriculum to meet assessed special needs.	Provides limited strategies to assist special needs students.	Inappropriate strategies to assist special needs students.	
	Accurate portrayal of cultural, racial, and religious diversity in society.	Mostly accurate portrayal of cultural, racial, and religious diversity in society.	Does not address diversity in society.	Inaccurate portrayal of diverse populations and society.	
Assessment	**3**	**2**	**1**	**0**	**N/A**
Provides a variety of assessment options	Multiple measurements of individual student progress at regular intervals ensuring success of all students.	Assessment requires students to apply some concepts.	Assessment requires students to apply few concepts.	Provides only paper and pencil assessment.	

Assessment cont.	**3**	**2**	**1**	**0**	**N/A**
Assessment tools	Scoring tools and rubrics in assessment package.	Some scoring tools and rubrics provided.	Very few assessment tools are provided.	Answer keys to paper and pencil assessments.	
Assessment alignment to objectives	Assessment is provided to assess 80% of stated objectives with a variety of assessment strategies and items.	Assessment is provided to assess 70% of stated objectives.	Assessment is provided to assess 50% of stated objectives.	Assessment is provided to assess less than 50% of stated objectives.	
Assessment for understanding	Assessment requires the application of ideas and concepts.	Assessment requires the application of some ideas and concepts.	Assessment requires the application of few ideas and concepts.	No application of ideas and concepts.	